

ABSTRACT OF THE DISCLOSURE

In an initial synchronization method in a DS-CDMA inter-base station asynchronous cellular scheme of transmitting a spreading code sequence constituted by a long code unique to each cell and a short code corresponding to each communication channel, an identification code (common identification code) common to each cell in a predetermined period (slot), and a long code group identification short code corresponding to the long code in each cell upon multiplexing the codes, a first stage includes detecting correlation power values between the common identification code and a received signal by using a correlator, and detecting a long code timing from a corresponding base station on the basis of a maximum value of the correlation power values, and performing threshold determination by comparing the maximum correlation power value with an arbitrary threshold, and performing processing again from the first stage if the maximum correlation power value does not exceed the threshold, a second stage includes detecting a correlation value between the received signal and each long code group identification short code, and obtaining a sum of the correlation values corresponding to the number of long code group identification short codes in each slot

according to a transmission pattern of long code group
identification short codes in each predetermined long code
group, setting a group having a maximum correlation sum as
a group to which a long code of the received signal
5 belongs, detecting a slot in which a head of the pattern
is obtained as a start slot of a frame, and comparing an
arbitrarily set threshold with the maximum correlation sum
and performing processing again from the first stage if
the maximum correlation sum does not exceed the threshold,
10 and a third step includes sequentially generating replica
codes of long codes and short codes from long code
candidates included in the long code group identified in
the second stage, performing correlation detection for the
obtained synchronization timing, performing long code
15 correlation detection to check whether the correlation
detection value exceeds an arbitrary threshold, returning
to the first stage if none of correlation detection values
of all long codes exceeds the threshold, and determining a
long code exceeding the threshold as a long code of a
20 target cell, performing synchronization detection by using
a frame sync signal, completing initial synchronization if
synchronization is detected, and returning to the first
state if synchronization is not detected.